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ECOSA: A REPORT ON A PAN-AFRICAN ENVIRONMENTAL EDUCATION SURVEY

SUMMARY The Education and Communication for Sustainability in Africa (ECoSA) survey set out to provide an overall picture of environmental education provision in Africa in order to identify areas where European Union support could best assist the environmental education process. The survey gathered information through questionnaires, semi-structured interviews at grass roots level, country visits and a consultative workshop. A principal product of the survey was a databank with over 300 African organisations involved in environmental education. The Final Report reviews environmental education provision in different sectors as well as suggesting a number of guiding principles and proposing priority areas for European assistance.

We do not talk about environment, we talk about what is important to us ...
(80 year old woman, Mali)

Introduction

A major difficulty for prospective donors with finite resources has been the lack of information available on the current state of environmental education in Africa. Education and Communication for Sustainability in Africa (ECoSA) attempted to overcome this strategic vacuum by investigating the state of environmental education provision and compiling a database containing details of a vast array of environmental education programmes currently being implemented across the continent. Directed by the UK-based International Centre for Conservation Education on behalf of the European Commission, the ECoSA survey began as a means of rationalising donor spending by effectively targeting assistance to Africa. The alternative to such supply-led, donor-driven assistance lies in a process of informed negotiation and consensus building and so a conscious effort was made to direct the survey not only towards Africa but increasingly from Africa.

The survey identifies environmental education with a process, described in the Final Report as social advocacy, in which the differing perceptions of stakeholders are revealed and issues of sustainable resource management are resolved through negotiation and communication. This approach to environmental education embraces issues of empowerment and social development by addressing people's own information and educational needs rather than simply transmitting environmental messages. It is because the very subject matter of the survey brought into question the assumptions upon which it was founded that the ECoSA survey shifted away from a positivist research programme in order to provide a critical picture of current environmental education provision in Africa against which the European Commission might determine future priorities. This paper summarises the process and outcomes of the ECoSA survey.

Education and Communication for Sustainability

Reading a little like a fashion parade of environmental buzz words, education and communication for sustainability is not the easiest concept to translate into a range of African and European languages. Education and communication are used in conjunction in order to encompass those projects and programmes which would not classify themselves as 'educational' in the formal sense but which do depend upon the flow of information both between and among all those who have a stake in their activities.

Environmental education was adopted as a recognisable shorthand for education and communication for sustainability. Environmental education is open to many interpretations and some survey responses suggest that the term is confused with environmental studies in the formal sector (see Environmental Education in the Curriculum). The following explanation was provided on the cover sheet of the ECoSA questionnaire:

For the purpose of the ECoSA survey, environmental education is seen in broad terms and embraces ecological issues (e.g. wetland management, afforestation, national parks), development practices (e.g. sanitation schemes, soil conservation) and social concerns (e.g. rights of access to natural resources, shelter). The ultimate aim is to enable us to make informed choices which will lead us to more sustainable lifestyles.

This did not define environmental education, rather it suggested where it might be found in such a way that a broad range of environmental and social development programmes would not be excluded.

A search for that environmental education which was already occurring in people's lives became an important element of the survey. Without such an understanding it would be impractical to suggest ways in which environmental education might be assisted other than by risking the common pitfall of overlaying existing indigenous processes with externally initiated activity.

The Survey Methods

A small core team of individuals with expertise and experience in the field of environmental education and/or research was assembled to comment upon the development of the survey. A number of paths of inquiry were followed.

A review of literature on EE in 1994, including two electronic database searches, revealed only one Nigerian and two South African writers. This suggested that a Northern-based literature review is unlikely to yield an African perspective on environmental education

A questionnaire survey sought to gather information on the educational work of organisations and projects for the ECoSA 'database'. Over 30 questionnaires were pre-tested by African environmental educators and other interested individuals. The computer software for the database was not operational by the time the finalised questionnaires had to be printed so there was no opportunity to pilot the data entry process--a major drawback! In order to avoid sending unnecessarily bulky forms, the questionnaire was divided into the following sections:

- cover sheet
- formal education background
- environmental education in primary schools
- environmental education secondary schools
- national conservation strategies
- national environment action plans
- environmental education in projects and programmes
- networks
- environmental education in organisations.

The questionnaire was produced in English, French and Portuguese using different coloured paper for each section; this assisted the mailing and handling quite significantly. Over 1000 African-based state and non-governmental organisations (NGOs), were contacted and a 30% response rate was achieved.

Country visits to 10 African states permitted the verification of questionnaire responses plus interviews with representatives of state institutions and NGOs. Two categories of country were visited; those from which many questionnaires had been received (Ghana, Mali and Uganda) and those from which no

response had been received after the original deadline for replies (Central African Republic, Congo and Mozambique). Additional reports were supplied through opportunistic visits on programmes other than ECoSA (Malawi, South Africa, Zambia and Zanzibar).

An in-depth grass roots survey of individuals in rural and urban settings was carried out in order to learn from the experience and opinions of local people who would not normally be consulted by such a survey. Having initiated a questionnaire which would reveal how activists disseminated information, it was felt important to understand how people perceived the way in which they received environmental information and education. Furthermore, the questionnaire relied upon literacy in a European language and could not take account of the activities and processes taking place at the local level across Africa.

A semi-structured interview approach, drawing heavily on the experiences outlined by Slim & Thompson (1993), was adopted in three countries: Mali, Mozambique and Uganda. Six interviewers were hired in Uganda, four in Mali and two in Mozambique. All the interviews followed the same basic structure:

- reaching an agreed definition of the term 'environment'
- exploring issues related to the environment of particular concern to the interviewee
- identifying evidence of positive environmental action on the part of the interviewee
- identifying channels through which the interviewee acquired any information related to the above and the way in which they acquired new knowledge in general.

Pairs of field researchers, one female one male, worked in each location carrying out one-to-one interviews concentrating on their own gender group. The researchers experimented by interviewing at least one member of the opposite sex, although their reports on this proved inconclusive. In selecting local staff, professionals were sought who were fluent and literate in both their local language and the official language of the country. Where the interviewer retained close ties with their parental home this was used as a research location; in cases where this was possible both the quality and quantity of data were enhanced. A total of 120 people were interviewed. The dependability of this data was ensured by triangulation through multiple interviews, focus group discussions and parallel investigations in other settings.

A consultative workshop held in Durban, South Africa, in July 1995, was a pivotal listening exercise in the ECoSA programme involving over 30 African and Africa-based environmental education practitioners. The workshop comprised two days of intense discussions, largely among small working groups, based upon issues raised within a specially prepared interim report. This offered a unique opportunity for the joint analysis of the environmental education situation in Africa; for many African practitioners the concept of a two-way communication channel with a European donor was new and very welcome. A clear consensus emerged from the consultative workshop that ECoSA should continue as an Africa-based programme linking existing activities and programmes.

The workshop represented a re-orientation in the programme from an extractive activity to one of dialogue which, given an extension in time and resources, could have been further developed to create a truly collaborative research programme. A Transitional Committee of workshop participants was elected in order to maintain the momentum of the ECoSA programme and prepare a proposal for a second phase.

Inquiries, interviews and meetings with over 200 individuals from numerous African and European institutions provided further information on environmental education activities and augmented the list of contact addresses used in the questionnaire survey.

Outcomes of the ECoSA Survey

The 'Database'

In reality this is a databank comprising a pan-African address list of all questionnaire respondents together with detailed information presented under country headings. All African countries and island states sent at least one response except Djibouti, Libya and Somalia. Responses came from various sectors; Table 1 illustrates the types of responding organisation.

Where available, information on national policies and formal education is presented in the database ahead of government and parastatal organisations, while networks are identified separately, as are NGOs and their projects. Each entry includes information on the organisation's aims and activities, the importance of environmental education within these and a list of any publications or resources that they produce. Depending on the information supplied by the respondent, these entries vary from a few lines to a detailed summary of specific projects and programmes.

The database is available on two diskettes which can be run on personal computers running DOS, Windows or Windows NT; versions are also available for Apple Mackintosh and UNIX computers. The minimum hardware requirement is a 386-based personal computer with 4 Mb RAM, at least 4 Mb hard disk space and a 3.5 inch (1.44 Mb) floppy disk drive. Diskettes or, where appropriate, hard copies of the database have been distributed to all questionnaire respondents together with a 20 page Summary Report (produced in French and English).

The Final Report

This provides a full account of the research methodology and explores the provision of environmental education in different sectors (Vare, 1995). Appendices include summaries of environmental education provision by country, lists of environmental education projects funded by bi-lateral and multi-lateral donors, copies of the questionnaires, selected data from the questionnaires, tables of responses from the grass roots interviews, the Consultative Workshop proceedings, lists of all those interviewed or involved in data collection and a full list of references.

To some extent the Final Report suffers from the lack of clarity in the original Terms of Reference; with such a broad remit -- to survey environmental education in all sectors across the African continent -- it proved impossible to provide a satisfactory synthesis of all the information gathered on environmental education provision. Ironically it is the component of qualitative research which yields some of the most transferable information. This grass roots inquiry sought to identify existing processes of environmental education; the results are summarised below.

Results of Qualitative Grass Roots Inquiry

Recurring themes among the interviewees include social change and a critique of state institutions although the 'burning issues' are of a highly localised nature. Definitions of the term environment--an English word with no direct translation--tend to reflect the interviewee's educational background:

We were told it could mean the things which surround us, that is how I know it and it should in fact be that. (A woman who had attended school, Uganda)

To some the environment is seen in terms of their religious or cultural beliefs; this appears to be a more 'home grown' definition:

The environment was put there by God and after that he put there people so that we may understand that he exists. The environment is also culture because each person belongs to a clan which has a line of descendants. Therefore the environment is the people. (68 year old man, Uganda)

Certainly, among some of the elderly interviewees the term environment appears more people-centered than among those who had learned it from school.

We do not talk about environment, we talk about what is important to us: gardening, useful trees and culture. (80 year old woman, Mali)

A broad range of people and institutions are seen to be involved in the education process, although the only suggestion of a causal link between information sources and positive environmental action arises where these sources are people known to the interviewee, such as parents or neighbours.

Existing school curricula do not appear to reflect the total environment (i.e. the social, economic, cultural and ecological context) as experienced by young people. There appears to be a mismatch between what is taught in school and the knowledge that was gained in the past through experiential learning and discussions within the family. The issue of societal change is felt as dramatically as in any European country, with concomitant implications for relevance in the content and process of formal education:

We used to sit with our mothers and fathers and they would tell us folklore and stories. ... Now, children go to school, when they come back they are tired. A child wakes up at 6.00 a.m. and comes back at 6.00 p.m. There is hardly time for you to sit with your children to tell them stories and proverbs. (An old woman, Uganda)

With African school curricula reflecting the artificially divided disciplines of a European culture it is not surprising to observe that to some extent school has failed to replace many useful elements of the traditional learning which it has helped to displace.

Sources of Environmental Learning

From the data (interview transcripts) it is possible to define information sources in terms of four principal modes of communication; these categories provide a continuum in terms of the proximity of the information source to the individual.

1. Self-Taught/Own Observation. Where no external source is acknowledged; e.g. *'We have learned about plastic by observation, no source of information told us; but when you see that your animal is dead and you find plastic in his stomach, you know ...'* (35 year old man, Mali)
2. One to One Communication. In most cases this relates to family members and close neighbours, although other agents are also apparent; e.g. *'I boil water because when we take the children to hospital we are told by the doctors to do so'* (an 'uneducated' mother, Uganda)
3. Collective Education. This includes schools, clubs and extension workers; e.g. *'I joined women groups and there we learned more things. They for instance taught us how to improve on food productivity and better methods of preserving our food'* (a middle aged women, Uganda)
4. Mass Media. Analysis of the interview transcripts shows that, with the exception of radio, people seldom come into contact with mass media. Out of 120 people only three men and one woman claim to have received information through print media.

Figure 1 gives a visual impression of the relative significance of the different modes of communication identified in the analysis of the interview transcripts.

When the responses of men and women are compared there is little difference in the pattern except that mass media are recorded slightly more for women than for men. This is because women refer to radio as a source of information, particularly in Mali. There is surprisingly little difference between rural and urban populations except that mass media are scarce in rural areas; the major variation appears between Mozambique and the other two countries; this is likely to be a result of sparse data from Mozambique coupled with the disruption there to local extension services during years of civil unrest.

In summary, informal environmental education appears to rely largely upon interpersonal communication skills rather than on the mass media, which have yet to make a serious impact in terms of disseminating environmental information to communities.

This component of the ECoSA survey begs further analysis; a comparative study between selected Ugandan transcripts and data gathered in the UK has since been undertaken by the author and may be reported upon elsewhere.

Findings on Environmental Education Provision National Strategies

National Conservation Strategies (NCSs) were proposed as part of the first World Conservation Strategy (IUCN, 1980) and focused on natural resource management; National Environmental Action Plans (NEAPs) have emerged as a requirement of the World Bank, with the aim of integrating environmental issues into a country's social and economic development. Almost every country in Africa has prepared or has plans to prepare a national strategy focusing on environmental concerns.

Two common concerns regarding the NEAP process (PANOS, 1993) were endorsed by individuals involved in preparing them in two countries:

(i) the time frame allowed for their preparation was too short and did not allow for a truly participatory process--only eight of the 33 countries which responded to questionnaires on this issue claim to have involved local representatives in the preparation of the policy (see Fig. 2);

(ii) it was generally felt that NEAPs would become a condition for International Development Association (World Bank) funding, countries may thus feel pressured to produce them--all of the national environmental strategies identified have tended to be top-down and have, despite genuine local concern, largely been responses to external imperatives.

Specific strategies for environmental education are being prepared or considered by a number of countries. Ghana's Environmental Protection Agency (EPA) appears to have produced Africa's first National Environmental Education Strategy. The EPA sought to involve line ministries and an NGO forum, although, according to one EPA official, time constraints did not allow for a thorough grass roots participatory process in the preparation of the strategy.

Environmental Education in the Formal Sector

With only 14 countries responding to formal education questionnaires, ECoSA could not supply a complete picture of formal environmental education provision in Africa, although the responses do support information gathered through field visits and recent literature. Formal schooling appears to be characterised by inadequate resources in all areas, including policy formulation, teacher training and teaching materials. Figures gathered on the boy:girl ratio in school classes indicate that females continue to be disadvantaged through lower levels of school attendance.

Environmental education in the curriculum. Data gathered through the questionnaires suggest that environmental education related issues appear in many of the currently taught subjects. The figures on the extent to which teachers are equipped with the necessary knowledge, training and materials to teach environmental education reveal a serious shortfall in all of these areas. The fact that some respondents felt that environmental education is only covered by science at the primary level and biology and geography in secondary schools suggest that environmental education is often equated with environmental studies.

Country visits highlighted a number of initiatives being undertaken by curriculum planners aiming to enhance the relevance of basic education. In the face of an already overloaded curriculum, the focus has been on cross-curricular approaches which infuse environmental education into existing subjects. Only South African and Namibian curriculum developers appeared to be in a position to address overtly political issues such as empowerment vis-a-vis environmental action.

Of the 12 education officials who completed formal education questionnaires, all but one cite curriculum reform and teacher training programmes as the two most important activities for improving environmental education provision in their countries. Even among those outside the formal sector who were presented with a far wider list of options, the majority indicate that inclusion of environmental education within their national curricula is the most pressing need.

Examinations. Despite demonstrable support for environmental education, the questionnaire responses do not suggest that environmental education is about to become a principal focus of any examination system. Discussions with curriculum planners and teachers in three countries suggest that those examinations cited in the questionnaire responses usually refer to existing practice in subjects which include issues related to the environment, rather than specific efforts to assess the delivery of environmental education in the curriculum.

Given that formal assessment will have a significant bearing on the extent to which environmental education is embraced by parents and the community and that examinations can be a powerful, low cost means of influencing the quality of what teachers teach and what students learn in school (Pennycuick, 1993), the issue of assessment in the formal sector appears to be under-rated at present.

Extra-curricular activities. Apart from not being formally assessed, the term 'extra-curricular' also implies a voluntary aspect to the activity, however, this may be an incorrect assumption in countries such as Equatorial Guinea and Malawi, which claim that 100% of schools run such activities. Most of the activities in primary schools appear to be run through clubs organised by teachers; practical tasks such as tree planting and school gardens are popular. At the secondary level tree planting and school trips appear to be the most common activities. Extra-curricular opportunities allow pupils to follow their interest in environmental matters although provision is sporadic and there is a tendency to focus on 'green' aspects of the environment; such activities do not therefore substitute for a coherent environmental education programme.

Teacher training. Questionnaire responses give a picture of an under-trained teaching force both through the stated percentages of qualified teachers and in the fact that teacher training is ranked second among the list of improvements required to enhance the provision of environmental education. Training in environmental education issues is more likely to be compulsory at the primary level than at secondary, probably because primary teachers are trained to deliver all subjects. As noted above, the subjects in which environmental education features in teacher training suggest that respondents equate environmental education with environmental studies. The summary in Table 2 shows that environmental education is rarely treated as a separate issue for in-service teacher training; for pre-service teachers environmental education is only mentioned explicitly as a course unit in Seychelles and South Africa.

Tertiary education. The 13 countries which responded to the formal education questionnaire state that there is either no provision for environmental education at the tertiary level (four countries) or mention courses within other subjects such as agriculture and science.

Environmental education is still a relative newcomer to universities and other tertiary institutions. Rhodes University in South Africa appears to be the first to institute a Chair of environmental education. In Nigeria the Biological Gardens Unit of Obafemi Awolowo University and the Environmental Education Unit of Benin City University run short courses and seminars on environmental education. Research into the content and relevance of environmental education in Nigeria's educational system and media houses is being conducted at the University of Ibadan. Utalii College in Kenya incorporates environmental education into regular courses for travel operators, tour guides and to a lesser extent for hotel management.

Bringing participants of the ECoSA Consultative Workshop to the Annual Conference of the Environmental Education Association of Southern Africa in 1995 highlighted a conceptual gulf that exists between a number of environmental education programmes in southern Africa. These draw on current environmental education theory, particularly critical science and post-modern perspectives, and the majority of African environmental education activities, which follow a less critical behaviourist model. This supports the impression that few environmental education programmes beyond southern Africa have benefited from a critical relationship with researchers at the tertiary level.

Non-formal and Informal Environmental Education Initiatives

Country visit reports provided a number of case studies to inform the questionnaire responses. Social development projects, using genuinely participatory techniques tend to work with people rather than for them. Some environmental education programmes are following this trend by addressing people's needs rather than simply transmitting environmental messages. Again, a contrast emerges between a number of progressive initiatives, particularly in southern Africa, and the more limiting institutional circumstances prevailing in some central African countries.

Many responses from projects and programmes mention their concern with gender issues. Apart from groups and networks established specifically by and/or for women the survey has not revealed any explicitly stated practical policy for ensuring that information exchange is carried out in ways that are not divisive along gender lines, for example by not relying on literacy.

A most promising programme of complementary education opportunities was found in the Master Plan of Operations of UNICEF--Government of Uganda (1994). Their approach avoids treating life stages as sectors but recognises that the developing child represents a process and a wholeness, which is how parents view their children. Part of their workplan, entitled COPE (Complementary Opportunities for

Primary Education), serves non-school-going children and includes a cross-cutting programme called Life Skills which addresses many environmental education objectives.

Environmental clubs appear in a significant number of parastatal and nongovernmental organisations which are not categorised by sector but by approach. Clubs have a long history characterised by enthusiasm, a wide range of approaches and the innovative use of media. The transmission of messages espousing environmental protection *per se* tends to be a dominant activity, often reflecting the interests of their parent organisations, such as national park authorities or wildlife societies. Membership may be school based, such as that of Wildlife Clubs of Uganda, or more loosely affiliated, such as the wider constituency of Zambia's radio based 'Chongololo Club of the Air'. Clubs offer opportunities for information gathering and involvement in practical activities to a committed membership, although, by definition, membership implies some exclusivity and while anyone is free to join, by the same token they are as likely not to join; out of school youth are a case in point. The way in which clubs are established will also have a bearing on their ability to sustain activity on their own. In Malawi, where informal clubs were formed independently of any central organising committee, over 1500 schools claim to have active extracurricular clubs, whereas in Uganda club membership plummeted during a period in which the previously strong national co-ordinating body became dysfunctional.

Training

The perceived need to train environmental educators is highlighted by the questionnaire responses, while training in environmental education was also sought by officials who were interviewed on the country visits. Only six questionnaire respondents mentioned environmental education training as a specific activity (as opposed to training in other practical activities) and this tended to be specifically project based; quality training programmes in environmental education appear to be a rare commodity.

Southern African participants of the ECoSA Consultative Workshop described opportunities which existed for hands-on experience, although funding is not normally available to the host organisations (e.g. Africa Resources Trust, Zimbabwe and members of Share-net in South Africa). The two examples identified by the survey which offer relevant, medium-term programmes are the certificate course at Rhodes University and the Elsamere Field Study Centre at Naivasha in Kenya. The Ecole de Faune in Cameroon and Mweka College of Wildlife Management in Tanzania offer training related specifically to wildlife management, which includes an element of education and awareness.

Beyond Africa, specific training in environmental education is available at the International Centre for Conservation Education and Jordanhill College in the UK and the Centre for Environment Education, India, the latter having limited places for Commonwealth students on their annual course. Field workshops on participatory visual material production are offered by Health Images, a UK-based charity which focuses on the training of community-level workers in making and using pictures to support processes of empowerment.

The Influence of UNCED

Only three responding countries claim to have initiated discussions on environmental education in the curriculum as a result of the United Nations Conference on Environment and Development (UNCED, Rio Summit in 1992). Discussions with officials suggest that UNCED did not initiate or redirect specific policies, although it was an important awareness-raising activity among national leaders; this has assisted in creating a political climate conducive to the development of environmental education programmes. One environmental NGO in Ghana claims that UNCED was a reaction to what was happening in the field. GTZ (Germany's Technical Assistance programme) indicated that since the Rio conference their funding had focused more on educational activities. UNCED called on countries to develop National Sustainable Development Strategies which combine social, ecological and economic concerns in a unified strategy; at the completion of the questionnaire survey in late 1995 none were in evidence.

Environmental Education Materials

Nowhere is the presence of donor funding more apparent than in the materials that organisations produce. A sizeable collection of material was accumulated over the course of the ECoSA programme, although it was not possible to gain accurate information on the processes involved in their development. With 142 questionnaire respondents claiming to produce their own material, there is clearly a vast range to be found. Against this, ECoSA's grass roots research (see above) indicates that printed material has yet to figure in the environmental education process at 'grass roots' level.

The formal education questionnaires indicates a shortage of environmental education materials in schools, although clear policies on environmental education are not always in place to justify the widespread production of environmental education support materials. The UK arm of the World Wide Fund for Nature, who have assisted a number of African states in the planning of environmental education programmes, stresses the need for a national policy statement before publishers mass produce educational materials. Production of material for schools has been carried out by donor-funded projects and NGOs and has received corporate sponsorship in South Africa. Where such materials are unsolicited, the fact that schools are eager to receive them does not necessarily indicate that they will complement existing educational programmes. The production of sequential art (comic strip) magazines (examples include Action magazine in Zimbabwe and Walia in Mali) are highly valued by those teachers who can obtain them, but supplying isolated rural schools on a national basis remains a problem.

The survey revealed some interesting examples of local material production, including the computer-generated newsletters of the Living Earth project in Cameroon, the production of leaflets and posters at village workshops run by the Mount Elgon Conservation and Development Project in Uganda and 'grass roots' curriculum development and resource production involving the Natal Parks Board in South Africa (O'Donoghue & McNaught, 1991). These three examples all exhibit a strong capacity-building element where the lasting educative value lies in the production process as much as in the product itself.

Networks and Materials Sharing

Questionnaire responses show that the networking of ideas either informally or through established networks is practised by the majority of responding organisations. These are international, regional or national in their coverage and fall into four distinct, although not mutually exclusive, categories.

1. Those focused on environmental education (six were identified): Environmental Education Association of Southern Africa (EEASA); Global Rivers Environmental Education Network (GREEN); Namibian Environmental Education Network (NEEN); Nigerian Environmental Study/Action Team (NEST, co-ordinating an environmental education network for Nigerian NGOs); Réseau Sahélien d'Éducation Environnementale (RESEE); Share-Net (South Africa)
2. Those which support NGOs: Ghana's National Union of Environmental NGOs (NUENGO); Sierra Leone Association of NGOs (SLANGO); Uganda's Development Network of Indigenous Voluntary Associations (DENIVA)
3. Networks of organisations which promote development and/or environmental issues whose work closely relates to environmental education but is not exclusively concerned with it: ENDA Tiers Monde; Eastern Africa Environmental Network; Environmental Justice Networking Forum; INFOTERRA, International Referral System for Sources of Environmental Information (FAO/UNEP)
4. Those which focus on a specific technical area: Botanic Gardens Conservation International; Réseau Africain d'Action Forestier (RAAF); African Forum for Children's Literacy in Science.

Existing networks often take the form of alliances whose aim is not simply to support each other but to have a meaningful role in defining government policies; NGO networks in Ghana (NUENGO), Uganda (DENIVA) and South Africa (EEASA) provide examples of this. South Africa's informal 'Share-Net', which has no central organising body, is the only example found of a network with a specific focus on sharing environmental education resources.

Initiatives of European Union Member States

European Union member states assist a wide variety of projects which include an element of environmental education, although few examples were found of support being directed specifically to environmental education programmes. The most significant European funded activity in this field appears to be that of:

1. The European Union, which funds the regional Training and Information Programme on the Environment (PFIE). The EU also funds ECOFAC (Forestry Ecosystem of Central Africa), which in turn funds environmental education activities in the Central African Republic, Cameroon, Gabon, Congo, Equatorial Guinea and Sao Tome
2. GTZ (Germany), which supports curriculum development programmes in Cameroon, Kenya, Tanzania, Uganda and Zambia plus teacher training and materials development for environmental studies in Zimbabwe
3. WWF-UK, through the ODA's Joint Funding Scheme (JFS), assists environmental education programmes in Nigeria, Tanzania and Zambia, offering technical support to facilitate national processes. Zimbabwe's Africa Resources Trust also receives ODA assistance through the JFS
4. SIDA (Sweden) has supported Ethiopia's environmental education programme since it was established in 1985.

All of these examples involve working with the existing structures in formal education, although ECOFAC is less clearly linked with curriculum development. The regional nature of the EU programmes offer opportunities for cross-fertilisation and cultural exchange but do spread available resources thinly so that no comprehensive nation-wide environmental education programme can be supported in any single country.

Discussions with senior education officials revealed that many national donors have a limited impact upon the vast undertaking of national educational provision, however, a single project can distort the implementation of policy as vehicles and enhanced salaries become available to officials within a specific department. The technicist approach to educational aid supplied by the World Bank has raised concern among educationalists (Smith, 1995).

Two areas of concern highlighted in the literature include the project approach with its externally set objectives, budgets and timetables (Cherret et al., 1994) and the way in which African states have been encouraged to achieve Northern development goals. This is not confined to the government sector, as many Southern NGOs are simply mirrors of their Northern counterparts (Fowler, 1992). The way in which large donors assist local social processes and the extent to which it is both possible and desirable to set criteria for measuring social processes is an area which begs further inquiry.

Part of the justification for rigid project funding cycles lies in an inability to guarantee substantial funding in the long-term; this raises the question of scale. To the Wildlife Clubs of Uganda their small but flexible grant from WWF, which can be relied upon over several years, is of far greater value than a massive injection of funds for equipment and carefully prescribed activity which risks distorting their programmes. Also, in Uganda the indigenous NGO, Harmony, staged local teachers' workshops with an immense voluntary input in terms of planning and administration; to a foreign donor, the administration costs incurred in supporting this activity might prove more expensive than the amount donated and yet this is the very process which supporters of environmental education would wish to encourage.

Points for Discussion

The implications of the ECoSA survey can be outlined briefly in a series of points which might be further developed in subsequent discussions.

1. Beyond formal interpretations, the concept of environment is viewed in terms of individual concerns. If the information provided is not linked to these things then it will at best be seen as irrelevant and at worst a nuisance (either way it is still likely to be received politely if not enthusiastically, so unless we listen hard to what people have to say before we design our programmes we will be none the wiser). If programmes are designed, implemented and evaluated with stakeholders, then it is the term 'target group' which becomes irrelevant, not the information.

2. This study clearly supports the assumption that most information of an environmental nature relies largely upon person to person contact; this appears to be the way that people learn best; according to the interviewees, this is the way that most people learn. This supports the research of Agarwal (1992) who, in a review of the available literature on the efficacy of mass media campaigns in India, finds that the only success stories are those where micro-level experiments were conducted over a prolonged period. He concludes: 'I tend to believe that it was systematic human intervention coupled with mass media that was responsible for any positive gains' (Agarwal, 1992, p. 14).

3. It was interesting to note that environmental education in the national curriculum and training environmental educators were clearly identified as the greatest perceived needs of ECoSA questionnaire respondents. From a list of 17 options for improving the provision of environmental education, the five most popular rankings all involved schools and/or direct training. These were not far removed from the apparent needs identified in the grass roots survey, i.e. to work face to face with people and contextualise formal schooling. The style as well as the content of formal education might better reflect the socio-economic and cultural setting of pupils.

4. The practical application of theory evident in some southern African environmental education programmes suggests that environmental education in the tertiary sector has an important role to play in the critical re-analysis of environmental education practice in much of Africa. Environmental education in the tertiary sector should be developed as a matter of some urgency.

5. In reviewing materials there is a danger that one becomes overly concerned with the quality of production (which is important), whereas the extent to which people feel that the material is theirs will be a far more significant factor in determining their level of success.
6. There is a need for donors to be more flexible and to look at the environmental education process on a more long-term and macro basis. The damaging tradition of discrete project phases needs to be overcome if lasting, positive environmental action is to be achieved.

The Survey Proposals

A number of guiding principles which should inform the support of potential donors have been identified. These are largely self-evident and widely supported, but not always apparent in practice:

- support environmental education programmes which seek to listen in the first instance rather than to tell
- support processes rather than products
- start with where people are and build upon what they have
- support environmental education activities as part of a national strategy in order to benefit from the synergy of a coherent, multi-sectoral programme
- promote interactive participation throughout, from setting budgets to monitoring and evaluation

- take account of the social, cultural, political, ecological and economic context in which the programme will develop – and the effect the programme will have on this
- assist processes where people learn from each other
- build capacity in Africa; Africans need to be engaged at every level of planning and implementation.

Recommended Priorities for Supporting Environmental Education in Africa

The following list represents a number of options for priority actions which emerge from the survey findings. Priority areas are offered as suggestions rather than as a prescriptive list of specific projects.

Curriculum development and teacher training. This would involve investigating policy implications at the classroom level, where policy intersects with individual decision making. Realistic policies for implementation should be based upon the social, economic, ecological, cultural and political context of the learners, i.e. a truly environmental education. If lasting change is to be effected it should be embedded within the existing teacher training policy and institutions of the country.

Training. Increased training and information sharing opportunities among educationalists and extension agents would facilitate the adoption of a more critical perspective on the learning process. Demand-led technical training could, in many cases, be provided through existing organisations given a properly funded programme of skills transfer opportunities. Training in materials production could also explore the material production process as a tool for information gathering and empowerment. There are few courses of an academic nature outside South Africa. As Africa seeks to develop indigenous expertise in this field, support to tertiary institutions which are able to offer quality courses and research should figure in any strategic plan to assist the provision of environmental education.

Research. Specific research questions highlighted by the survey include the need to investigate and develop criteria for evaluating the impact of environmental education programmes and modalities for supporting community-based initiatives without distorting them. Action research with existing institutions and processes should enable environmental education practitioners to identify their own processes and criteria for evaluation with the communities with whom they work. The results of research could be made readily available through a regular magazine/journal.

National environmental education strategies. Support to existing environmental education strategy processes would be of direct benefit to countries which have the capacity to implement major environmental education programmes but lack co-ordination at the national level. Acknowledging that environmental education is taking place in some form would suggest that the production of a strategy would be a research as well as a planning exercise.

Materials databank. There is a great deal of material with no clear mechanism for accessing it. Collecting and distributing references and information on availability of materials would be more cost effective than gathering actual copies.

Micro funding. In the course of the survey a number of organisations with specific needs came to light. ECoSA would have been well placed to deal with these needs had a modest fund been in place for that purpose. Such a fund could be administered through an ECoSA network although this should not be seen as a clearing house for support from any particular donor.

Development of an ECoSA network. ECoSA has initiated a process which could be maintained and expanded in the form of an operational databank to be further developed in Africa. This databank should ensure the dissemination and exchange of information and the identification of common priorities. It would be well placed to forge links between organisations seeking to implement new programmes and those practitioners with considerable experience. It would also serve as a bridge between African practitioners and donors.

Concluding Remarks

ECoSA provided a snapshot of current environmental education provision in Africa and highlighted a number of issues related to the process. The report proposes a shift away from the assumptions of donor-driven assistance and seeks a more collaborative approach to assisting and implementing environmental education programmes in Africa. Such an approach requires excellent communications among all those concerned, particularly environmental educators and donors. For the donor the issues of supporting processes without distorting them, of being focused yet flexible and of evaluating long-term, open-ended programmes remain important areas for further research.

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TABLE 1. Questionnaire responses classified by type of organisation (total circulation 1200)

Type of organisation	Number
Academic	4
Business	4
Donor	6
Government	111
Independent initiative (individuals)	2
International organisation	17
Non-governmental organisation	149
Parastatal	11
Religious	7
Total	311

TABLE 2. Environmental education provision in in-service teacher training at primary and secondary levels

Legend for Chart:

- A - Country
- B - Primary: Separately as a subject
- C - Primary: Cross-curricular theme in all subjects
- D - Primary: As it arises within existing subjects
- E - Primary: Not at all
- F - Secondary: Separately as a subject
- G - Secondary: Cross-curricular theme in all subjects
- H - Secondary: As it arises within existing subjects
- I - Secondary: Not at all

A	B	C	D	E	F	G	H	I
Burkina Faso	--	--	*	--	--	--	--	--
Cape Verde	--	--	*	--	--	--	--	--
Chad	--	--	--	--	--	--	*	--
Congo	--	--	*	--	--	--	*	--
Equatorial Guinea	--	--	--	*	--	--	*	--
Guinea	--	--	*	--	--	*	--	--
Malawi	--	--	*	--	--	*	--	--
Mali	--	--	--	--	*	--	--	--

Mozambique	--	--	--	*	--	--	*	--
Namibia	--	--	*	--	--	*	*	--
Niger	--	--	--	--	--	--	--	--
Seychelles	*	--	--	--	--	--	--	--
South Africa	*	*	*	--	*	*	*	--
Tunisia	*	--	*	--	*	--	*	--
Uganda	--	--	*	--	--	--	--	--

GRAPH: FIG. 1. Sources of information categorized by style or mode of communication: results by country (percentages). These are percentages drawn from interviews with 60 people in Uganda (40 rural, 20 urban), 40 in Mali (all rural) and 20 in Mozambique (all peri-urban). From the data it proved difficult to differentiate between extension workers' one-to-one visits and group meetings, thus proportions for collective education are slightly exaggerated while one-to-one learning is under-represented.

GRAPH: FIG. 2. Involvement in writing national environmental actions plans.

REFERENCES

AGARWAL, B.C. (1992) Can mass media help accelerate the process of rural development?, seminar paper reproduced for the TALEEM course Communicating for the Environment (Ahmedabad, India, Centre for Environment Education).

CHERRETT, I. et al. (1995) Redefining the roles of environmental NGOs in Africa, Development in Practice, 5, pp. 26-35.

FOWLER, A. (1992) Institutional Development and NGOs in Africa: policy perspectives for European development agencies (Oxford, INTRAC).

IUCN (1980) World Conservation Strategy: living resources conservation for sustainable development (Gland, Switzerland, IUCN).

O'DONOGHUE, R.B. & McNAUGHT, C. (1991) Environmental education: the development of a curriculum through 'grass-roots' reconstructive action, International Journal of Science Education, 13, pp. 391-404.

PANOS (1993) World Bank Demands Environmental Action: the story of NEAPs. Panos Media Briefing No. 6 (London, Panos).

PENNYCUICK, D. (1993) School Effectiveness in Developing Countries: a summary of the research evidence (London, ODA).

SLIM, H. & THOMPSON, P. (1993) Listening for a Change: oral testimony and development (London, Panos).

SMITH, R.L. (1995) Backward mapping: the way forward for World Bank educational policy formulation, in: J. LYNCH et al. (eds) Education and Development: from tradition to innovation (London, Cassell).

UNICEF-GOVERNMENT OF UGANDA (1994) Country Programme 1995-2000. Master plan of operations with programme plan of operations. Draft for submission to UNICEF Executive Board (Kampala, UNICEF-Uganda).

VARE, P. (1995) Education and Communication for Sustainability in Africa (ECoSA): final report (Cheltenham, ICCE).